ABSTRACT

A base station 2 demodulates a wireless signal after downconverting the signal to a low-frequency signal whose center

5   frequency is fi [Hz] and oversampling the signal. A mobile station 3 demodulates a wireless signal after downconverting the signal to a low-frequency signal whose center frequency is fd [Hz] and undersampling the signal. The same sampling frequency fs [Hz] is used in the base station 2 and in the mobile station 3. The

10   sampling frequency fs [Hz] is set to a value that is an even-number multiple of a wireless symbol transmission rate such that oversampling is done in the base station 2 and undersampling is done in the mobile station 3. The center frequency fi [Hz] is 1/2 to 1 times a frequency corresponding to the bandwidth and is

15    $1/2^N$ (N is a natural number) times the sampling frequency fs [Hz].